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# Approaching the society-nature dialectic : a plea for a geographical study of the environment

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- In the fall of 1998, the South-East Asian financial and economic bubble imploded as stock markets crashed, currencies devalued and panicking investors packed up their capital and whizzed it out to more secure places. Just a few months later, the media reported that malaria and dengue were spreading rapidly throughout Jakarta, while homeless children roamed the streets and the number of women and children prostitutes expanded with frightful speed. It seemed as if the geo-politics of uneven development had fused with bacteria, epidemic disease vectors and gender inequalities in an urban environment that increasingly looked like the first post post-industrial landscape. Indeed, as capital fled, dozens of unfinished skyscrapers were dotted over the urban map, providing great ecological niches for a thriving mosquito population that proliferated happily when the abundant monsoon rains poured down over a socially disintegrating Jakarta. Yet, in the geographical literature, very little if any attention has been paid to excavating the disturbing geographies of this process despite its outright geographical character. Medical and epidemiological geography could successfully combine with climatology, studies of global environmental change, economic geography, gender and social geography and the like, in a way that would turn geography into one of the most exciting and relevant disciplines in the academic division of labour. Moreover, if we were to engage in such work, we might come somewhat closer not only to living up to the expectations and images that geography and geographers so often like to present of themselves in their glossy departmental brochures and popular magazines, but also to filling the gaping holes in our knowledge and understanding of 'environmental' change in which human and physical processes fuse together in new and often unexpected manners. Furthermore, the human/environment interaction is exactly the very foundation on which geography legitimises itself and claims its own niche in the academic world. This task becomes all the more pressing if we consider the relentless rise of the 'environmental' problem on the political agenda.

- 2 Indeed, for more than ten years now, the environment – and its apparently ever-deepening crisis – has been a major political and socio-economic issue. Today, more than ever, we question our way of ‘living on Earth’, our interactions with the ‘natural’ world and the ‘sustainability’ of our future.
- 3 The environmental debate, at first very marginal and mainly focused on a rather uncritical rejection of the present economic mode of development, has gradually become more subtle in its analysis and more constructive in its agenda setting. This coincided with a greater attention from both the scientific world and the public at large for the environmental problematic. It is rather surprising that geography, among all the disciplines that have begun to invest intellectual and creative energy in this debate, has remained largely absent from the core of these endeavours. Clearly, geography and geographers work on matters ‘environmental’, but have – at least since the quantitative revolution of the 1950s – systematically severed the traditional geographical mode of enquiry (which insisted on relating the human to the physical world) and increasingly inserted themselves in the hegemonic view that the natural sciences are (and should be) distinct from the social sciences and the humanities. Although lip-service is still paid to the integration of both, the practice of much of contemporary geography reveals nothing else than a growing (and often institutionalised) separation between human and physical geography. The middle (i.e. the site where ultimately the ‘environment’ becomes constructed) has been increasingly emptied out. In fact, at a time when lawyers, economists, historians, or engineers can prepare a doctoral thesis on a question such as « what is a forest ? » in a way that merges physical and social perspectives, geographers seem to miss the conceptual tools required for this task. The division of geography into two compartmentalised poles, the physical and the human, has prevented geographers from building bridges between the natural and the social. Very few physical geographers seem to care about the socio-economic structures that produce the pollution, erosion, climatic, and other processes they study. Very few human geographers seem to care about the ecological implications of the human structures they claim as their area of expertise. Much of contemporary geography is just content trotting the well-know path charted a few decades ago and whose dogma insisted on separating the natural from the social.
- 4 In recent years however, the nature-society problematic in geography has seen something of a revival, not surprisingly exactly at a time when the traditional binary visions of the world (society-environment, nature-culture, men-women, etc.) are being questioned. One of the possible perspectives that attempt to illuminate the particular way in which social affairs interpenetrate with physical processes is ‘political ecology’. Although there is by no means any consensus as to what exactly constitutes ‘political-ecology’, its practitioners nevertheless share a concern with demonstrating how relations of social power infuse with natural processes and, in doing so, produce particular ‘environments’ that are characterised by a distinct configuration of natural elements as well as a distinct configuration of human attributes. For example, soil erosion, desertification, or deforestation become the result of processes that are shaped by ecological, biological, chemical, and physical processes in interplay with practices of, for example, peasants engaged in survival strategies in the context of particular local, national and international political and economic power configurations. To put some more flesh on this, we shall in what follows elaborate on some of its aspects. First, we shall demonstrate why the modern representation of nature is necessarily limited in

terms of understanding contemporary environmental problems. Alternative formulations, mainly coming from an historical-geographical materialist perspective, will be presented. In the final part, we shall briefly recapitulate the historical representations of nature as it developed in geography in order to draw attention to the major concepts that can still be valuably used today. We shall on occasion take 'water' as our entry into exemplifying some these arguments. Water is perhaps the most basic and simple example to illustrate the recasting of the nature/society relationship that we are arguing for.

## Hybrid worlds

- 5 The common sense use of the term 'nature' refers to nature as 'the environment' ; a term which in itself implies a distance, a separation between that 'world' and the social sphere. This particular discursive use reveals a particular representation of nature – an 'ideology of nature' (see N. Smith (1984)) – which is deeply associated with the modern western world<sup>1</sup>. It is based on a double principle : on the one hand, nature is seen as *external* to society, at times wild and uncivilised or as embodying healing, spiritual and a moral superiority. While nature has to be tamed and controlled, it is as often invoked as the source for revival re-creation and for legitimising all manner of moral acts (varying from competition to mutual aid). On the other hand, of course, nature is seen as *universal*, as possessing and expressing general applicable laws and dynamics to which everything and everyone is inevitably subject to. From the latter's perspective, Man is of course an integral part of nature. This contradictory ideology of nature originates with the Enlightenment. Science and engineering has made major strides forward as the principle of separation enabled a scripting and a particular understanding of nature as separate from man, while its universality permitted man to transform the very nature of which he or she was and is part. Ironically, as the work of scientists further re-enforced the nature-society split, the world became increasingly more filled with things that were unmistakably hybrid in character, in which the social and the natural are both produced outcomes of a socio-ecological process. The textbook example of the latter is of course genetic engineering as a social process that literally recasts nature to produce a proliferating set of new natures. The enlightenment visioning of the world, framed by new social forms of organisation (principally capitalism and the modern State), led to ever more complex forms of mastering nature. Until recently, the Western world largely benefited from this particular way of relating to and of transforming nature, but in recent times, it is becoming increasingly apparent that the modernist mastering of nature, confronted as we are with energy, pollution and waste problems in addition to serious social conflicts and global/local inequalities, is showing serious problems and fractures. The mastering of nature, which was intended to free humanity from the constraints imposed by external nature has de facto produced new forms of nature ; new forms of nature that still hide serious consequences from humans. In fact, the modern enterprise has resulted in the proliferation of *Hybrids*, things that are simultaneously natural and social, but without discrete boundaries.
- 6 Indeed, the desire of scientists to purify the world into two separate poles seems to have lost much of its explanatory and political power in an era when it is becoming increasingly apparent that things 'natural' and things 'cultural' do not exist side by side as the two opposite poles of a dialectical unity. As Bruno Latour suggests (1993), the separation between nature and society that was generated by the practices of the

scientists permitted precisely the proliferation of socio-natural 'things', hybrids or quasi-objects. 'Dolly', the cloned sheep invented/produced by Scottish researchers in 1997, or Oncomouse, a mouse genetically modified to get cancer, have become canonical examples of this (Haraway, 1994; Haraway, 1997). Similarly, urban and regional landscapes, climate change, Ozone depletion in the stratosphere and Ozone overconcentration in the troposphere, El Niño and the forest fires in Indonesia, prions and BSE, the threat of perennially polluted drinking water, testify to the myriad ways in which the natural and the social have transgressed and continue to blur the boundaries that modern science, including geography, have tried to spin around the 'natural' and 'social' worlds.

- 7 Indeed, on closer inspection, the city, Ozone, BSE, 'Dolly' or human bodies are networks of interwoven processes that are simultaneously human and natural, real and fictional, mechanical and organic. There is nothing 'purely' social or natural about them, even less a-social or a-natural; these 'things' are both natural and social, real and fictional. Society and nature, representation and being are inseparable, integral to each other, infinitely bound up. Simultaneously, these hybrid socio-natural 'things' are full of contradictions, tensions and conflicts.
- 8 Historical geographical materialist analysis may provide powerful explanatory insights in this process of hybridisation. In *Grundrisse* and in *Capital*, Marx insisted on the 'natural' foundations of social development. Clearly, any materialist approach necessarily adheres to a perspective, which insists that 'nature' is an integral part of the 'metabolism' of social life. Social relations operate in and through metabolising the 'natural' environment and, consequently, transform both society and nature. New socio-natural forms are continuously produced as moments and things in this metabolic process (see Grundman, 1991; Benton, 1996). While nature provides the foundation, the dynamics of social relations produce nature's and society's history. Of course, the ambition of classical Marxism was wider than reconstructing the dialectics of historical socio-natural transformations and their contradictions. It also insisted on the ideological notion of 'nature' in bourgeois science and society and claimed to uncover the 'real' *Truth* through the excavation of 'underlying' socio-ecological processes (Schmidt, 1971; Smith, 1984; Benton, 1989). However, by concentrating on the labour process per se, Marxist analysis tended to replicate the very problem it meant to criticise. In particular, by rendering nature to the substratum for the unfolding of social relations, in particular of labour relations, it maintained the material basis for social life, while relegating 'natural processes' to a realm outside the social. Ironically, this is almost exactly identical to the hegemonic modern ideology that views nature as external to society, yet universal in its functioning (see above). In recent years, attempts have been made to re-dress this apparent Promethenism, a view that assumes man's role in mastering and controlling nature.
- 9 Neil Smith (1984), for example, insisted that nature is an integral part of a 'process of production'. The latter concept, borrowed from Henri Lefebvre ((1974)1991), suggests that nature itself is a historical-geographical process (time/place specific), insists on the inseparability of society and nature and maintains the unity of socio-nature as a produced thing. In brief, both society and nature are produced, hence malleable, transformable and transgressive. Smith does not suggest that all non-human processes are socially produced, but argues that the idea of some sort of pristine nature (First Nature in Lefebvre's account) becomes increasingly problematic as historical socionature

produces entirely new 'nature' over space and time and the number of hybrids and quasi-objects proliferates and multiplies. This process embodies both (and simultaneously) social and physical transformations and changes. Indeed, from the very beginning but accelerating as 'modernisation' heated up, the objects and subjects of daily life became increasingly more socionatural. Consider, for example, the transformations of entire ecological systems (through agriculture, for example), the proliferation of tropical diseases in Jakarta under the twin impulse of global capital and global climatic oscillations, sand and clay metabolised into concrete buildings, or the contested production of new genomes. Anthony Giddens (1997) suggests in this context that we have reached 'The End of Nature'. Of course, he does not imply that nature has disappeared, but rather that there is nothing out there any more that has not been transformed, tainted, metabolised by society/culture. Whereas pre-modernity was undergoing the consequences of nature, modernity announced the consequent attack on nature through transforming nature. The 'End of Nature' implies, therefore, the construction of a new nature, a nature that still hides serious threats. This is the theme Ulrich Beck (1992, 1995) elaborates. The possibility of producing 'new' nature, ranging from nuclear installations to dams, entails the proliferation of 'risk'. Risk should be understood here not in terms of hazards, but in terms of the unexpected and unknowable implications of producing new nature and the problems that individuals, states, and science face in the process. A new modernity looms around the corner, one that is still rift with tension and conflict, but also holds the promise of fabricating socio-nature more in tune with the desires, aspirations and demands of humans.

- 10 In sum, the 'world' is a complex, variegated, diversified historical-geographical process of perpetual metabolism in which 'social' and 'natural' processes combine in a historical-geographical 'production process of socionature' whose outcome (historical nature) embodies chemical, physical, social, economic, political and cultural processes in highly contradictory but inseparable manners. Every body and thing is a cyborg, a mediator, part social part natural but without discrete boundaries and internalises the multiple contradictory relations that re-defines, re-works every body and thing. In other words, nature and society are dialectically linked to each other (Ost, 1995). They are not separated, as modernists claim, neither do they form a single entity as post-modern deep ecologists suggest (Pepper, 1993). They are different from each other but they define each other, just like men and women, life and death or other conceptual/material binary entities. There is some social in nature and some natural in society : every modification of one entails modification of the other. This perspective has rather important implications in terms of interpreting and dealing with contemporary environmental problems.
- 11 Firstly, thinking about socio-nature avoids invoking an external and universal 'nature' as the ultimate and unquestionable legitimisation of the world's environmental condition, from droughts to differences in human intelligence or sexuality. Too frequently, environmental crises are presented as fatalities we must cope with, as *facts* for which no one is responsible and against which we are just powerless (such as famines, floods, or droughts). However, these crises always contain socio-economic tensions and power relationship on which the production of nature is based. For example, Mike Davis suggests how nature and society become materially and discursively constructed in and through the dialectics of Los Angeles' urbanisation process and of the multiple social struggles that have infused and shaped this process in deeply uneven, exclusive and empowering/disempowering ways (Davis, 1992 ; Davis, 1995). Homelessness and racism

combine with pollution, earthquakes and water scarcity as the most acute socio-ecological problems that have been produced through the particular form of post-industrial capitalist development that has shaped LA's becoming as the Third World Megalopolis.

- 12 Secondly, this approach permits to reveal the historical production of socio-natural hybrids, and hence to help understand their *crisis*. In fact, our society has increasing difficulties to manage proliferating crises that are neither purely natural or social, such as, for example, BSE, air or water pollution, dioxines in chicken, genetically modified crops, or global warming. The stability of human edifices based on the transformation of nature is the result of historical processes. In order to manage instability, one has to understand how the *socio-natural mechanisms* have been implemented and how they have evolved. More importantly, if the environment is an historical product, then the key political question becomes one of who constructs what sort of environment for whom.
- 13 Let us consider for a moment the example of potable water. Drinking tap water combines the circulation of productive, merchant and financial capital with the production of land rent and their associated class relations ; the ecological transformation of hydrological complexes and the bio-chemical process of purification with the libidinous sensation and the physiological necessity of drinking fluids ; the social regulation of access to water with images of clarity, cleanliness, health and virginity. Although we cannot separate these 'concepts' and practices from each other in the flow of water, it does not take much to identify the profound social, cultural, political and ecological forces, struggles and power relations at work in this perpetual metabolising circulation process of flowing water. The deepening water crisis world wide (in terms of accessibility, of quantity and quality, of presence and absence and the myriad of social struggles unfolding over it, from localised water conflicts to international water wars) are the outcome of a multiplicity of relationships that become embodied and expressed by the socio-natural flow of water. Water problems are mostly the result of multiple factors : natural processes, technological strategies, political decisions taken under scientific uncertainty, power relationship between lobbies, social protest based on scientific, cultural, social or political factors. Multidisciplinary is of course not new in the environmental debate, but it must be enhanced, for it cannot be happily achieved by adding up the findings of the different particular scientific perspectives : a new language must be found, based on a real socio-nature dialectic, based on the disclosure of the socio-natural networks through which a particular water cycle becomes constituted or produced. And what about the geographer ? Is he/she capable of developing such a dialectical language ?

## Geography, nature and water

- 14 To understand why geography did not take the lead in the proliferation of environmental studies like other sciences, we wish to summarise briefly some of the geographical approaches of nature, notably through the case of water. As Matless notes, late nineteenth and early twentieth century geography was deeply linked to the modernist project of mastering and transforming nature through technology in the pursuit of an ideal of social progress (Matless, 1992). However, although much of this work legitimated a profound mastering of nature, many perspectives did invoke notions of harmony and aesthetics. Consider, for example, Olmsted's masterly crafted Central Park in New York, or the anarchistic ecological utopias of Kropotkin. Moreover, some authors even



developed embryonic forms of a dialectical representation of the nature-society relationship: Geddes and Reclus, for example, conceived nature not as a passive receptacle to human will, but as an *active element* in the process of socio-environmental transformation. The latter was of course in stark contrast to other early academic geographies, which were partially or wholly built on determinist concepts. In studying the influence of soil, climate or vegetation on human facts, the discipline forged and imposed itself as a scientific valuable subject (Decroly, 1995). In particular, many geographers linked planning or social structures to Darwin's and Lamarck's theories on the evolution of species, in order to merge together nature and society in a unique, but rather singular and often deterministic explanation (Livingstone, 1992).

- 15 French geographers, led by Paul Vidal de la Blache, developed another approach, usually called 'possibilism', which considered natures as one factor among many that explain human socio-spatial diversity. Nature provides opportunities to societies, which, in turn, exploit them in diverse manners. Although more flexible and pluralistic, possibilism was content to state that different societies related in different ways to the possibilities and constraints nature posed. However, the two remained as a-priori and separate entities with their own separate dynamics. In addition, the actual functioning of these societies as well as the processes of environmental change and transformation remained largely outside the geographer's field of vision.
- 16 Water, of course, has not escaped the debates between determinists and possibilists. An abundant literature shows how geographers have interpreted rural and urban landscapes, social and political structures or region boundaries, either as a direct consequence of, or as an opportunist social response to, water configuration (Cornut, 2000).
- 17 The importance, of course, of these perspectives in the contemporary context is that they are still widely held. Indeed, determinist and possibilist concepts are still part of present debates, in the social and in the natural sciences as well as among the wider public (Decroly, 1995). 'Limits to Growth' theses, the 'Population Bomb'-menace, famine in the third-world often implicitly or explicitly invoke Malthusian and other environmentally deterministic interpretations. At best, some sort of social Darwinism often lurks behind many of the approached dealing with the above issues. This provides an opening for geographic investment in the environmental debate, for geographers, more than anyone else, should be sensitive to shortfalls of and intrinsic problems associated with both simplistic determinist models and the self-evident truisms of possibilism. This is of a particular importance for, as Grundman notes about sociologists, it is very difficult to overcome the nature-society separation without falling in the mistakes of the past, especially in an academic context that is globally unfavourable to socio-natural bridges (Grundman, 1999).
- 18 Unfortunately, the present overspecialisation in geography leads to a situation in which many find themselves uncomfortable in studying the interactions between nature and society. It seems as if most wish to forget that it has been the discipline's main objective during nearly a century.
- 19 Indeed, the 1950s witnessed a progressive academic marginalisation of geography (Livingstone, 1992). On the first hand, the eternal description of the causal relationships between 'man' and nature had finally come to a social and scientific disinterest. On the second hand, the scientific specialisation that characterises the era made geography at



odd within the academic context : final outcome of the modernist purification process, it is now inconceivable to study nature *and* society at the same time. Geography evolved then towards an ever more specialised scope. Firstly, physical geography has individualised itself : geomorphology or climatology is then studied alone, without any link to society, except possibly as a perturbative agent. For example, water is approached only under its 'natural' aspect : sediment, erosion, coastal shapes, etc. Secondly, human geography has also eliminated the physical facts from its analysis. Either neo-positivist geography or radical/marxist geography have stayed away from the society-nature interactions. Space is explained by mathematical/physical models, or by socio-economic contradictions and conflicts. Nature (and water) has no place in that scheme, for studying 'hybridity' bears the danger of falling into the old no-way debates (i.e. determinism and possibilism).

- 20 Consequence of that overspecialisation : ecological concepts have been incorporated very late in the discipline and, moreover, very often in a manner that was silent on the political and social conflicts inherent in environmental degradation (Demeritt, 1994 ; Cornut, 2000).
- 21 Only recently, nature and society have been linked together again in some geographical arguments : the so-called 'political ecology' has found a fertile ground in geography, mainly in the anglo-saxon world. Political ecology is a kind of mix between political economy and ecology. It inserts nature in theorising the particular modes in which societies politically organise their economic life : production, consumption, exchange, work division, etc. (Peet & Watts, 1996). From a political-ecological perspective, water has been the subject of geographical enquiry. For example, Nevarez has shown how the 'natural' water scarcity of the second part of the 1980s in Santa Barbara County has been (socially) *produced* and *used* by industrial lobbies to force the extension of the California State Water Project to the County in order to favour local industrial growth (Nevarez, 1996). Matthew Gandy has linked environmental and public health quality to socio-economic changes in New York City, by studying how water management reveals the long-term evolution of municipal power, capital investment strategies, the sociological transformation of U.S. society and the environmental degradation in metropolitan areas (Gandy, 1997). Karen Bakker has deconstructed the social *and* natural mechanisms that have produced the 1995 severe Yorkshire drought, showing how nature and society combine to yield the structural basis of the water crisis (Bakker, 1999).
- 22 These are powerful examples on how socio-natural mechanisms can be dialectically interpreted.

## Conclusion

- 23 The human/environment relationship has been scripted into the core of geography from its inception as an academic discipline in the late 19th century. From Elisée Reclus' proto-anarchist rendition of the society/environment interaction to Vidal de la Blache's possibilism and its continuation in Braudel's or Febvre's scripting of historical-geographical change, nature and culture, society and environment figured prominently in geography's core endeavour to excavate the culture/nature relationship. Similarly, German geo-politicians like Ratzel and later Wittfogel developed canonical interpretations that laid the foundation for more or less subtle forms of environmental determinism. It would of course be the socio-biological and social Darwinist visions that

underpinned Nazi-ideology that would eventually discredit these early environmentalist views. Moreover, the academic overspecialisation after World War Two marginalised the study of the *links* between nature and society. The environmental question, both scientifically and politically discredited, was subsequently relegated to the back-burner of geographic inquiry and yoked geographers under the dominance of a nomothetic, 'scientific' and positivist tradition that has haunted and plagued the discipline ever since. While geography and geographers, on both sides of the Atlantic, veered away from a real engagement with the 'environmental question', the latter pushed itself continuously higher on the political, social and academic agenda. It were, however, biologists, chemists, physicists, engineers and political scientists that became the key academic bearers of the environmental programme, while environmental activists kept the issue burning politically.

- 24 Undoubtedly, geography has things to offer to the environmental research. Firstly, its tradition is helpful to avoid past 'mistakes' explaining simplistically nature-society interactions. Secondly, it can fuel the argument with a *spatial* perspective, which sometimes lacks from environmental analysis. Dialectical relationship between nature and society takes place within specific spaces and places. These are defined both naturally, by physical factors, and socially, by human groups. Many places coexist, interfere with and overlay on each other : this spatial conflict is inherent to the society-nature dialectic. Space remains central to the analysis, understanding and politics associated with environmental changes and with the imagining and scripting of possible alternative worlds and environments.

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## BIBLIOGRAPHY

- BAKKER K. (1999), 'Privitising water, producing scarcity : the Yorkshire drought of 1995', *Economic Geography*, forthcoming.
- BECK U. (1992), *Risk society*, London, Sage Publications.
- BECK U. (1995), *Ecological politics in an age of risk*, London, Polity Press.
- BENTON T. (1989), 'Marxism and natural limits : an ecological critique and reconstruction', *New Left Review*, 178, pp. 51-86.
- BENTON T. (Ed.). (1996), *The greening of marxism*, New York, Guilford.
- CASTREE N. (1995), 'The nature of produced nature : materiality and knowledge construction in marxism', *Antipode*, 27, 1, pp. 12-48.
- CORNUT P. (2000), *Water circulation through Belgium and Brussels : social aspects of a natural resource management* (written in French : *La circulation de l'eau potable en Belgique et à Bruxelles : enjeux sociaux de la gestion d'une ressource naturelle* ), Brussels University, unpublished PhD thesis, 298 p.
- DAVIS M. (1992), *City of quartz. Excavating the future in Los Angeles*, London, Vintage, 460 p.
- DAVIS M. (1995), 'Los Angeles after the Storm : the dialectic of ordinary disaster', *Antipode*, 27, 3, pp. 221-241.

- DECROLY J.-M. (1995), *Are determinism and possibilism still up to date ?* (written in French : *Le déterminisme et le possibilisme sont-ils encore d'actualité ?*), Brussels University (Human Geography department), unpublished essay, 24 p.
- DEMERRITT D. (1994), 'Ecology, objectivity and critique in writing on nature and human societies', *Journal of Historical Geography*, vol. 20, no 1, pp. 22-37.
- FOUREZ G. (1992), *La construction des Sciences : les logiques des inventions scientifiques. Introduction à la philosophie et à l'éthique des sciences*, 2e éd., Coll. Sciences-Ethiques-Sociétés, Bruxelles, De Boek – Université, 290 p.
- GANDY M. (1996), 'Crumbling land : the postmodernity debate and the analysis of environmental problems', *Progress in Human Geography*, vol. 20, no 1, pp. 23-40.
- GANDY M. (1997), 'The making of a regulatory crisis : restructuring New York City's water supply', *Transaction of the IBG*, vol. 22, pp. 338-358.
- GERBER J. (1997), 'Beyond dualism : the social construction of nature and the natural and social construction of human beings', *Progress in Human geography*, 21, 1, pp. 1-17.
- GIDDENS A. (1997), 'Risk society : the context of British politics', in FRANKLIN J. (Ed.), *The politics of risk society*, Cambridge, Polity Press, pp. 23-34.
- GRUNDMAN R. (1991), *Marxism and ecology*, Oxford, Clarendon Press.
- GRUNDMAN R. (1999), 'Common pool resources, uncertainty, and the problem of collective action', Texte présenté à la conférence : *Sustainability, Risk and nature : the political ecology of water in advanced societies*, Oxford (15-17 April 1999).
- HARAWAY D. (1994), 'Mice into wormholes : a technoscience fugue in two parts', mimeographed paper, University of California, Santa Cruz.
- HARAWAY D. (1997), *Modest-Witness@Sec-ond-Millennium.FemaleMan(c)-Meets\_OncoMouse™*, London, Routledge.
- LATOUR B. (1993), *We have never been modern*, London, Harvester Wheatsheaf. (French edition : (1991), *Nous n'avons jamais été modernes : essai d'anthropologie symétrique*, Paris, La Découverte, 220 p).
- LEFEBVRE H. ((1974) 1991), *The production of space*, Oxford, Blackwell.
- LIVINGSTONE D. (1992), *The geographical tradition : episodes in the history of a contested enterprise*, Oxford, Blackwell.
- LIVINGSTONE D. (1995), 'The polity of nature, representation, virtue, strategy', *Ecumene*, 2, 4, pp. 353-377.
- MATLESS D. (1992), 'A modern stream : water, landscape, modernism and geography', *Environment and planning D, Society and Space*, 10, pp. 569-588.
- NEVAREZ L. (1996), 'Just wait until there's a drought : mediating environmental crises for urban growth', *Antipode*, 28, 3, pp. 246-272.
- OST F. (1995), *Outlaw nature, ecology confronted to law*, (written in French : *La nature hors la loi , l'écologie à l'épreuve du droit*), Paris, La Découverte, 350 p.
- PEET R. & WATTS M. (Eds.) (1996), *Liberation ecologies : environment, development, social movements*, London, Routledge, 273 p.
- PEPPER D. (1993), *Eco-Socialism : from deep ecology to social justice*, London, Routledge, 270 p.

- SCHMIDT A. (1971), *The concept of nature in Marx*, London, New Left Books.
- SMITH N. (1984), *Uneven development*, Oxford, Blackwell, 200 p.
- SWYNGEDOUW E. (1996), 'The city as a hybrid. On nature, society and cyborg urbanisation', *Capitalism, Nature, Socialism*, 7, 2, pp. 65-80.
- SWYNGEDOUW E. (1999), 'Hybrid waters : on water, nature and society', Texte présenté à la conférence : *Sustainability, Risk and nature : the political ecology of water in advanced societies*, Oxford (15-17 April 1999).

## NOTES

1. See (Benton, 1989 ; Castree, 1995 ; Demeritt, 1994 ; Fourez, 1992 ; Gandy, 1996 ; Gerber, 1997 ; Latour, 1993 ; Livingstone, 1995 ; Ost, 1995 ; Pepper, 1993 ; Smith, 1984 ; Swyngedouw, 1996).

## ABSTRACTS

At a time when the environmental problem is becoming one of the major political and socio-economic issues, geography seems to face difficulties in approaching the subject. Although the study of society-nature interactions was the very foundation on which geography built itself as an academic discipline at the end of the previous century, today's geographical work reveals a deep gap in the representations of physical and human processes. We shall discuss the historical production of this gap through an explanation of the rise of modern sciences and a brief history of geographical approaches of nature. In doing so, the paper tries to draw attention to the major concepts that could help combining physical and human geographies in a new and more promising manner. Using 'political ecology' and 'historical materialism', we shall demonstrate how society and nature can be seen as dialectically linked to each other, and how geography is able to analyse the socio-ecological processes that shape the 'world'. This analysis merges together space, society and nature in a single framework without falling into the earlier dualist perspectives (i.e. determinism and possibilism).

A l'heure où l'environnement devient l'un des principaux problèmes politiques et socio-économiques, la géographie semble confrontée à certaines difficultés dans son approche de la question. Si l'étude des interactions entre société et nature a été la base même sur laquelle la géographie s'est érigée en tant que discipline universitaire à la fin du siècle dernier, l'oeuvre des géographes d'aujourd'hui révèle une profonde distorsion entre les représentations des processus physiques et des processus humains. Nous nous pencherons sur la production historique de ce déséquilibre en nous basant sur une explication du développement des sciences modernes ainsi que sur un bref historique des approches géographiques de la nature. Le présent article a pour but d'attirer l'attention sur les concepts majeurs permettant de combiner géographie physique et géographie humaine d'une manière inédite et plus prometteuse. Par le biais de l' 'écologie politique' et du 'matérialisme historique, nous démontrerons comment société et nature peuvent être vues comme dialectiquement liées l'une à l'autre et comment la géographie permet

d'analyser les processus socio-écologiques qui façonnent le 'monde'. Notre analyse fusionne espace, société et nature dans un cadre unique en évitant les perspectives dualistes du passé (déterminisme et possibilisme).

## INDEX

**Mots-clés:** géographie, théories géographiques, représentations de la nature, matérialisme historique, écologie politique, eau, environnement

**Keywords:** geography, geographical theories, representations of nature, historical materialism, political ecology, water, environment

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